

# SUMMARY | STAKEHOLDER SCIENCE COMMITTEE WEBINAR

## LAKE TAHOE WEST RESTORATION PARTNERSHIP

Tuesday, May 2, 9:00 am to 12:00 pm

*All meeting materials are publicly available on the Lake Tahoe West website <http://nationalforests.org/laketahoewest>. For questions please contact the program manager/facilitator Dorian Fougères at [dfougeres@nationalforests.org](mailto:dfougeres@nationalforests.org) or (530) 902-8281.*

### Meeting Synopsis

The Lake Tahoe West Restoration Partnership (LTW) Stakeholder Science Committee (SSC) and Stakeholder Community Committee met via webinar on May 2, 2017. Stakeholders recommended the Lake Tahoe West (LTW) Project Boundary; the accompanying explanatory text or map itself will show that the eastern boundary interacts with Lake Tahoe. Stakeholders also reviewed and provided input on the three major work products. These included, first, reviewing the revisions made on the draft table of Essential Management Questions, which addressed the comments received during the April 4 SSC meeting. Discussion included clarifying “watershed”, that restoration may produce secondary benefits for recreation, the need to add additional prefatory text, and the inclusion of cultural resources questions. The second product addressed the properties of resilient systems and the draft disturbance indicators for the Landscape Resilience Assessment. Discussions ranged from what resilience looks like for primary indicators, to the datasets and models being used to analyze disturbance indicators. Suggestions included providing the SSC with information regarding what datasets are used in EcObject, and clarifying the meaning of each primary indicator. Third, stakeholders briefly discussed the climate and management assumptions and re-structured narratives for the planning scenarios. This included discussing the significance of the variability in the climate assumptions; full drafts should be available for the next meeting. The next SSC meeting will be on June 6, from 1 pm to 5 pm, with the location being South Lake Tahoe, and then an all-day field trip with the SSC and Stakeholder Community Committee on June 7.

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*This meeting summary paraphrases individual comments and suggestions. Statements do not indicate consensus of the group unless they are preceded by the word "AGREEMENT". Statements are not attributed unless spoken by one of the organizing or participating agencies, or by a presenter.*

## 1. Action Items

1. **Jennifer Quashnick and Dorian** to work on revised introductory language for the Essential Management Questions.
2. **IADT Staff** to revise the Essential Management Questions per May 2 SSC feedback, including providing a summary of significant changes.
3. **Sue Britting** to provide information on relevant work around the conditional probability of high severity fires.
4. **IADT Staff** to revise Landscape Resilience Assessment, including addition of a column on indicator intent/description, and start drafting information on the range of desired resilient conditions.
5. **Mollie Hurt** to review draft information on indicator intent/description for the Landscape Resilience Assessment.
6. **IADT Staff and Science Team** to provide short descriptions of models identified in the Landscape Resilience Assessment and Science Team planned work.
7. **IADT Staff** to restructure planning scenarios to call out hypotheses and resulting conditions.
8. **Dorian** to distribute copy of the Charter with executive signatures, and request signatures from SSC representatives.
9. **Dorian** to distribute the list of monitoring activities on the west shore.

## Agreements

1. **Lake Tahoe West Project Boundary:** The SSC recommended the LTW Project Boundary, pending the addition of language or boundary line revision to show that the project interacts with Lake Tahoe.

## 2. Welcome and Opening Remarks

- Mr. Dorian Fougères, Lake Tahoe West Restoration Partnership's (LTW) Facilitator, welcomed the SSC and noted that Mr. Randy Striplin will be the lead representative for the IADT during the webinar, due to Mike Vollmer being out of the office.
- Mr. Striplin, US Forest Service, Lake Tahoe Basin Management Unit, welcomed the SSC members to the webinar and invited them to interject with any questions as they arise during the webinar.

### Interested Party Comments Period #1:

No comments.

### 3. Lake Tahoe West Project Boundary

- Mr. Fougères presented the proposed LTW project boundary map to the participants. He reviewed the need for the analysis area to include ecological features outside of the planning area boundary. The IADT will work with Eldorado National Forest and Tahoe National Forest to gather necessary information for LTW phases 1 and 2. He reaffirmed that the planning area is entirely within the Lake Tahoe Basin and all projects will take place within these boundaries.

Discussion followed:

- Is the western boundary of the project area based on watersheds?
  - Mr. Striplin: Yes, we could have drawn an administrative or property line, but we wanted to follow watershed boundaries to make it consistent with planning areas.
- Blackwood Creek enters the lake, does this mean the eastern boundary ends at the lake level?
  - Mr. Fougères: LTW is not focused on the near shore because it has its own regulations, and several agencies are already working on near shore issues. LTW could influence lake water quality and clarity.
- Any work we have in our project area will have some type of impact in the lake, so do we want to add a dotted line in the boundary along the lake?
  - Mr. Fougères: We noted in the Essential Management Questions that we are analyzing impacts on lake water quality and clarity.
  - Mr. Striplin: This is a good point and we did consider that based on ecological principles. We stopped at lake because there is a lot of work on invasive species and there are already projects addressing these issues in the lake.
  - A participant noted that it would be beneficial for LTW to explore ways to call out the consideration of Lake Tahoe in the analysis. This could be shown somehow in the map itself, or indicated in some prefatory text, so people understand that the work done on the land interacts with the Lake.
- **AGREEMENT:** The SSC recommended the LTW Project Boundary, pending the addition of language or boundary line revision to show that the project interacts with Lake Tahoe.
  - Members present: Bruce Springsteen, Jeff Brown, Jennifer Quashnick, Matt Freitas, Maureen McCarthy, Mollie Hurt, Patricia Maloney, Sue Britting.

### 4. Essential Management Questions

- Mr. Striplin voiced that the IADT is appreciative of suggestions from SSC. The IADT has made changes to the Essential Management Questions (EMQs) per April 4 comments.
  - The wording of each EMQ has been revised to include some positive framing and aspiration wording.
  - Wording now notes temporal trade-offs such as short-term impacts and long-term gains.
  - Carbon sequestration was moved to the watershed category.
  - Invasive species is included in both terrestrial and aquatic ecosystems.

- Recreation questions were reworded to avoid implying that recreation and restoration are incompatible.
- An additional question was added regarding ways to minimize residual material that is left on-site.
- Prefatory language explaining the intended uses and the spatial and temporal considerations of the essential management questions was also added.
- The topic of cultural resources is missing and will need to be added. Jonathan Long, LTW Science Coordinator, made recent suggestions that will be included in the next draft.

Discussion followed:

- Could you reiterate why carbon sequestration was moved to watershed?
  - Mr. Fougères: We moved it under watershed to acknowledge carbon fluxes and stocks include wetlands and also cross terrestrial and aquatic systems at the landscape scale.
- There is a focus on the stream environment zone in the watershed category. Their previous comment regarding carbon sequestration being moved to the watershed category was under the assumption that watershed was a larger scale.
  - Mr. Fougères: Initially we combined watershed with landscape. Later we added a column for spatial scale in the matrix. We defaulted to a watershed as Stream Environment Zones because meadows and riparian areas are partly terrestrial and partly aquatic.
  - A participant suggested that since watershed is the interface of terrestrial and aquatic systems, the watershed category can capture the interface in terrestrial and stream environment zones as long as it includes both scales.
  - Mr. Fougères: We can incorporate a definition of how watershed is being used into the prefatory language.
  - A participant noted that if watershed is only considered the interface of terrestrial and aquatic systems, then moving carbon sequestration from terrestrial into watershed doesn't sense because most of sequestration is in forested lands.
  - A participant noted that terrestrial and aquatic ecosystems tend to focus on discrete ecosystem units. Watersheds could look at terrestrial and aquatic processes without being limited on a scale.
  - Mr. Fougères: We should clarify that "watershed" can be a place where we look across different scales. For carbon, we could call it out in terrestrial, aquatic, and watershed, and it could be addressed at a landscape scale and a more fine grained scale.
- Regarding question 12, it's not clear whether recreation or restoration is the priority.
  - Mr. Fougères: We should add in the prefatory language that we are first and foremost addressing restoration and we will incorporate opportunities for other issues such as transportation and recreation.
- A participant suggested adding prefatory text to explain the context of the EMQs, and asking that people who cite the document include this text.

- **ACTION ITEM:** Jennifer Quashnick and Dorian to work on revised introductory language for the Essential Management Questions.
- **ACTION ITEM:** IADT Staff to revise the Essential Management Questions per May 2 SSC feedback, including providing a summary of significant changes.

## 5. Landscape Resilience Assessment

- Mr. Fougères briefed the SSC on how the IADT sought to focus on indicators of resilience. The published literature identified managing diversity, connectivity, and slow feedbacks as properties of resilient systems. The IADT kept these properties in mind when discussing potential indicators.
- Mr. Striplin explained that the IADT will use EcObject to aggregate data in assessment units.
- Ms. Jen Greenberg, California Tahoe Conservancy, stated the IADT started by analyzing indicator of resilience for each disturbance individually. Fire regimes were expected to not be informative in the short-term, but in the long-term they highlight a lot about the heterogeneity in landscapes. The IADT added terrestrial, aquatic, and watershed columns to ensure they were addressing each disturbance type in each category.

Discussion followed:

- Since natural fire regimes have almost all departed, using fire regime departure as an indicator may not be helpful. Combining surface fuel loading into other indicators as well as using estimated flame lengths might be more beneficial for analyzing fire disturbance.
  - Mr. Striplin: One of the things the IADT has been thinking about is using a second analysis at 30 meter resolution to give us an indicator on areas that were greatest risk of large severity fires.
  - A commenter suggested that the first and third fire indicators should be composites which provide information for temporal fire severity distribution.
  - Ms. Greenberg: We looked at fire risk index and struggled with it because of everything that is built into it, such as the Wildland Urban Interface and proximity to structures, which weren't necessarily ecologically focused. We're open to using this index as part of a larger indicator and even developing our own in EcObject.
  - A commenter suggested that another alternative could be using the Forest Vegetation Simulator model and conditional probability of flame length.
    - **ACTION ITEM:** Sue Britting to provide information on relevant work around the conditional probability of high severity fires.
  - Mr. Striplin: I agree that the fire risk index on EcObject may not be appropriate. FSim contains fire behavior indicators and might be able to convert fire regime into flame length. Overlaying FSim outputs with EcObject data could provide a robust product.
- Hydrologic indicators such as peak runoff and mean annual flow should be included as indicators of climate change, too.
  - Ms. Greenberg: Drought indicators do speak to these. We struggled with indicators of resilience to this disturbance, as compared with just general indicators of this

- disturbance. Low flow would be measure of drought and changing climate, as opposed to resilience to drought.
- Mr. Fougères: It will be helpful to have prefatory language that explains that we are looking for not just indicators of a disturbance, but indicators of resilience to that disturbance.
  - There are additional data sources regarding the diversity of ecotypes that could be more suitable than EcObject.
    - Mr. Fougères: The IADT will need to explain what sources they were considering. We will share this concern with the IADT.
    - Mr. Striplin: The structural characteristics and any forest type or species level type is going to be based on Landsat data. Any species level indicators will be based on some other indicators.
  - We should have an indicator to tell us if system is able to respond under extreme flow events. One of the big concerns is, Can we describe resiliency to those extreme storms, such as rains in the middle of winter? I'm not sure how to quantify this, but it an important part of the climate spectrum.
    - Mr. Fougères: We will share this feedback with the IADT for more deliberation.
    - Also, columns G and H indicate initial and future assessments for monitoring. If we have a topic that we want to assess but currently don't have data on, we can flag it for potential monitoring and inclusion in a future assessment.
  - It could be helpful to frame the indicators by what that are trying to accomplish and then describe the metrics being used in another column.
    - **ACTION ITEM:** IADT Staff to revise Landscape Resilience Assessment, including addition of a column on indicator intent/description, and start drafting information on the range of desired resilient conditions.
    - **ACTION ITEM:** Mollie Hurt to review draft information on indicator intent/description for the Landscape Resilience Assessment.
  - What tools are being used to model wildfire? We have all of these indicators but I'm not sure what we will be doing.
    - Mr. Striplin: We're trying to get a baseline assessment of resilience and there are a variety of models. e thought LANDIS would be helpful for susceptibility to high intensity fire. LandFire only models a single static fire, so this would not touch on probability factor. We're not saying that FSim is the only appropriate tool, but rather that it may help answer some questions.
    - Mr. Fougères: We will have a dedicated presentation on the models that are part of the Science Team (ST) analysis, likely in July.
    - **ACTION ITEM:** IADT Staff and Science Team to provide short descriptions of models identified in the Landscape Resilience Assessment and Science Team planned work.
  - Ms. Greenberg: Chytrid fungus was something that we were unsure of regarding indicators for the disturbance.
    - Karen Pope (USFS Pacific Northwest Research Station), Sarah Muskopf (LTBMU), and Roland Knapp (UC Santa Barbara) could all help with thinking about indicators of resilience to disease. It's not clear whether data would be available, though.

- Ms. Greenberg: Regarding recreation, we don't have many indicators of resilience to increased human use.
  - Mr. Fougères: In April we proposed a series of primary and secondary disturbances; the IADT will discuss whether increased human use is a primary or secondary disturbance, particularly trail erosion and trash in streams.

## 6. Scenario Planning

- Mr. Fougères noted that the IADT is still awaiting information from an SSC member. A purpose statement was created to address the scenario assumptions. A previous suggestion to break-out the assumptions and hypotheses will also be addressed in the next draft.
- Mr. Striplin briefed the members on the attempt to discriminate between the two warmer climate scenarios. The 15 climate models being used are highly variable and do not show a high contrast by mid-century.
- A participant reviewed the air temperature and precipitation models. While average temperatures do not diverge significantly by mid-century, these are still significantly higher than past temperatures. Precipitation patterns will include more extreme events, as well as shorter winters and longer dry periods. The increases in temperature will also produce more intense rain events, with less precipitation falling as snow – even by mid-century. This should be incorporated into the climate assumptions, and we should seek to be resilient to intense rain events in winter, a drier dry season, and a shorter wet season.
- **ACTION ITEM:** IADT Staff to restructure planning scenarios to call out hypotheses and resulting conditions.

## 7. Final Items and Closing Remarks

Members approved the April 4 meeting summary, and in response to a question from Mr. Fougères, noted that the meeting summaries were helpful.

**ACTION ITEM:** Dorian to distribute copy of the Charter with executive signatures, and request signatures from SSC representatives.

Mr. Fougères also mentioned that the ET has produced a document highlighting the existing monitoring efforts on the California side of the Basin, which he will distribute to SSC members. He also informed the members that the IADT is working on an interactive map illustrating all of the active projects occurring on the West Shore.

- **ACTION ITEM:** Dorian to distribute the list of monitoring activities on the west shore.

Mr. Striplin thanked all of the attendees for their participation in the process and adjourned the meeting.

## 8. Attendees

Organizing and Participating Agencies

CTC – California Tahoe Conservancy  
NFF – National Forest Foundation  
RWQCB Lahontan - Lahontan Regional Water Quality Control Board  
State Parks – California State Parks  
TFFT – Tahoe Fire and Fuels Team  
TRPA – Tahoe Regional Planning Agency  
USFS – U.S. Forest Service

**Stakeholder Science Committee Members**

1. Bruce Springsteen
2. Jeff Brown
3. Jennifer Quashnick
4. Matt Freitas
5. Maureen McCarthy
6. Mollie Hurt
7. Patricia Maloney
8. Sue Britting

**Staff**

9. Amy Jirka, TFFT
10. Dan Shaw, State Parks
11. Dorian Fougères, NFF
12. Juan Carlos Urizar, CTC
13. Jen Greenberg, CTC
14. Mitch Markey, NFF
15. Pat Manley, USFS
16. Randy Striplin, USFS

**Interested Parties from the Public**

None